

Thornton Academy)	Departmental
York County)	Findings of Fact and Order
Saco, Maine)	Air Emission License
A-474-71-H-R/A)	

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

1. Thornton Academy (Thornton) of Saco, Maine has applied to renew their Air Emission License permitting the operation of heating equipment at their educational facility.
2. Thornton has requested an amendment to their license in order to reflect the replacement of one boiler with two new boilers.

B. Emission Equipment

Thornton is authorized to operate the following equipment:

Fuel Burning Equipment

<u>Equipment</u>	<u>Location</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (gal/hr)</u>	<u>Fuel Type, % sulfur</u>
Boiler #1	Gymnasium	7.90	56.0	#2 fuel oil, 0.5%
Boiler #2	Industrial Arts Building	1.70	12.3	#2 fuel oil, 0.5%
Boiler #3	Fine Arts Building	5.00	35.7	#2 fuel oil, 0.5%
Boiler #4	Fine Arts Building	5.00	35.7	#2 fuel oil, 0.5%
Boiler #5*	Admin Building	2.44	17.4	#2 fuel oil, 0.5%
Boiler #6*	Admin Building	2.44	17.4	#2 fuel oil, 0.5%

* New equipment

Thornton also operates a small Alumni Hall Boiler and a Fine Arts Building Hot Water Heater, both of which have input capacities of less than 1.0 MMBtu/hr, and are therefore listed for inventory purposes only.

C. Application Classification

The application for Thornton is an amended renewal of a minor source. A new emission unit at a minor source is considered a major modification based on whether or not expected emission increases exceed the "Significant Emission Levels" as given in Maine's Air Regulations. This amended renewal is determined to be a minor modification and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Boilers #1 - #4

Boilers #1 - #4 are utilized primarily to provide heat to the six buildings that comprise Thornton Academy. Boilers #1 - #4 are all rated below 10 MMBtu/hr and are therefore not subject to 40 CFR, Part 60, Subpart Dc for boilers greater than 10 MMBtu/hr.

A summary of the BPT analysis for boilers #1 - #4 is discussed below:

1. Boilers #1, #3 and #4 are subject to the PM emission limits in MEDEP Chapter 103. PM₁₀ emission limits are derived from PM emission limits.
2. A BPT emission limit of 0.12 lb PM/MMBtu shall be used for boiler #2. Lb PM₁₀/hr emission limits are derived from PM emission limits.
3. MEDEP Chapter 106 regulates fuel sulfur content, however the use of #2 fuel oil with a sulfur content not to exceed 0.5% is more stringent and shall be used.
4. NO_x, CO and VOC emission rates are based upon AP-42 factors for fuel oil combustion dated 9/98.
5. Visible emissions from each boiler shall not exceed an opacity of 20 percent on a six (6) minute block average basis, except for no more than one (1), six (6) minute block average in a 3-hour period.

C. Boilers #5 and #6

Boilers #5 and #6 are utilized primarily to provide heat to the six buildings that comprise Thornton Academy. Boilers #5 and #6 are both rated below 10 MMBtu/hr and are therefore not subject to 40 CFR, Part 60, Subpart Dc for boilers greater than 10 MMBtu/hr.

A summary of the BACT analysis for boilers #5 and #6 is discussed below:

1. A BACT emission limit of 0.12 lb PM/MMBtu shall be used for boilers #5 and #6. PM₁₀ emission limits are derived from PM emission limits.
2. MEDEP Chapter 106 regulates fuel sulfur content, however the use of #2 fuel oil with a sulfur content not to exceed 0.5% is more stringent and shall be used.
3. NO_x, CO and VOC emission rates are based upon AP-42 factors for fuel oil combustion dated 9/98.
4. Visible emissions from boilers #5 and #6 shall each not exceed an opacity of 20 percent on a six (6) minute block average basis, except for no more than one (1), six (6) minute block average in a 3-hour period.

D. Annual Emission Restrictions

Thornton shall be restricted to the following annual emissions, based on a 12 month rolling total, and an annual fuel limit of 150,000 gallons per year of #2 fuel oil with a maximum sulfur content of 0.5% by weight:

Total Allowable Annual Emission for the Facility

(used to calculate the annual license fee)

Tons/Year

Emission Unit	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	0.67	0.67	1.69	0.48	0.12	0.01
Boilers #2 - #6	0.86	0.86	3.60	1.02	0.26	0.03
Total	1.53	1.53	5.29	1.50	0.38	0.04

Note – emissions are based on the firing of 32% of the annual fuel limit in boiler #1, and 68% in boilers #2 - #6. These percentages are derived from the firing rate of each boiler and do not represent a license limit.

III.AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a renewal source shall be determined on a case-by case basis. Based on the total facility emissions, Thornton is below the emissions level required for modeling and monitoring.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-474-71-H-R/A subject to the following conditions:

STANDARD CONDITIONS

- (1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).
- (2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]
- (3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]
- (4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]
- (5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]
- (6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]
- (7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]
- (8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]
- (9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned

- changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]
- (10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]
- (11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:
- A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:
 - 1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
 - 2. pursuant to any other requirement of this license to perform stack testing.
 - B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and
 - C. submit a written report to the Department within thirty (30) days from date of test completion.
- [MEDEP Chapter 115]
- (12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:
- A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and
 - B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and
 - C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate

under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[MEDEP Chapter 115]

- (13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]
- (14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]
- (15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) Boilers

- A. Fuel use shall not exceed 150,000 gallons/yr #2 fuel oil with a maximum sulfur content of 0.5% by weight, based on a 12-month rolling total. Delivery records from the supplier shall be maintained for compliance purposes. [MEDEP Chapter 115, BPT, BACT]

B. Emissions shall not exceed the following: [MEDEP Chapter 115, Chapter 103, BPT, BACT]

Equipment		PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Boiler #1	lb/MMBtu	0.20	-	-	-	-	-
	lb/hr	1.58	1.58	3.98	1.13	0.28	0.03
Boiler #2	lb/hr	0.21	0.21	0.86	0.24	0.06	0.01
Boiler #3	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.59	0.59	2.47	0.70	0.18	0.02
Boiler #4	lb/MMBtu	0.12	-	-	-	-	-
	lb/hr	0.59	0.59	2.47	0.70	0.18	0.02
Boiler #5	lb/hr	0.29	0.29	1.23	0.35	0.09	0.01
Boiler #6	lb/hr	0.29	0.29	1.23	0.35	0.09	0.01

- C. Visible emissions from each boiler shall not exceed an opacity of 20 percent on a six (6) minute block average basis, except for no more than one (1), six (6) minute block average in a 3-hour period. [MEDEP Chapter 101]
- (17) Thornton shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605).

Thornton Academy
York County
Saco, Maine
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**Departmental
Findings of Fact and Order
Air Emission License**

(18) Payment of Annual License Fee

Thornton shall pay the annual air emission license fee within 30 days of **September 30th** of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3. [38 MRSA §353-A]

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 1/12/2005

Date of application acceptance: 1/25/2005

Date filed with the Board of Environmental Protection: _____

This Order prepared by Jonathan Voisine, Bureau of Air Quality.